

warning level: **THREAT** (Ethiopia, Iran)

DESERT LOCUST BULLETIN

FAO Emergency Centre for Locust Operations



No. 353

(3 March 2008)



General Situation during February 2008 Forecast until mid-April 2008

The Desert Locust situation continued to be serious in parts of the Central Region during February. Several swarms formed in central Oman and moved through eastern Yemen, Saudi Arabia, UAE to southern Iran. Hatching and hopper band formation are likely to occur in southern Iran. Immature swarms persisted in rugged areas of southern Ethiopia where little control could be carried out. These swarms are expected to move to the Ogaden region and perhaps to northern Somalia and breed. Locusts declined in the winter breeding areas on the Red Sea coast, especially in Sudan, and no significant developments are expected. The situation remained calm in the Western Region.

Western Region. The situation continued to remain calm during February. Small-scale breeding continued for the fourth consecutive month in northwest Mauritania but locust numbers remained low and insignificant. Locusts increased slightly in central and southern Algeria where scattered adults were present in several areas. Low numbers of adults are likely to be present in parts of northern Mali and Niger but surveys could not be conducted in these areas due to insecurity. Scattered adults are expected to persist in these countries and small-scale breeding could occur if further rains fall. No significant developments are likely during the forecast period.

Central Region. As vegetation dried out, several small immature swarms formed in central and southern Oman by mid February. Most of the swarms moved through UAE to southern Iran while a few swarms first moved to eastern Yemen and then crossed the Empty Quarter in eastern Saudi Arabia to the Persian Gulf. The swarms were highly mobile so only limited control operations could be carried out. Immature swarms persisted in southern Ethiopia, but survey and control operations were hampered by the remote mountainous areas. Therefore, the current situation is not very clear. Nevertheless, the swarms are likely to remain in the Harar Highlands and eventually move to the Ogaden region and breed when the long rains begin in March or April. There is a low to moderate risk that a few swarms could move to northern Somalia. Locusts declined on the Red Sea coast of Sudan where ground control operations were carried out against late instar hopper bands and adults in the Tokar Delta. A few adults were present in southern Egypt.

Eastern Region. Small-scale breeding occurred on the southeastern coast of Iran during February. On the 20th, a small swarm from the northeastern Arabian Peninsula arrived on the southern coast, dispersed and laid eggs. As only part of the swarm was treated, hatching and small hopper band formation will occur in March. Scattered adults are likely to be present in western Pakistan. Locust numbers are expected to increase in the spring breeding areas of Baluchistan in Iran and Pakistan from breeding that occurs during the forecast period.

The FAO Desert Bulletin is issued monthly, supplemented by Updates during periods of increased Desert Locust activity, and is distributed by e-mail, FAO pouch and airmail by the Locusts and Other Migratory Pests Group, AGP Division, FAO, 00153 Rome, Italy. It is also available on the Internet.

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Weather & Ecological Conditions in February 2008

Although very little rain fell during February throughout the recession area, vegetation remained green in parts of the northern Sahel and ecological conditions were favourable for breeding in the Tokar Delta in Sudan and on the southern coast of Iran.

In the **Western Region**, very little rain fell in February except for light showers in parts of central and southern Mauritania, Western Sahara, the central Sahara in Algeria and on the southern side of the Atlas Mountains in Morocco near Ouarzazate. Dry and dusty northerly Harmattan winds occurred at times over the Sahel and southern Sahara. In northwest Mauritania, small localized patches of green vegetation were present in the valleys of the Kediet Imert plateau in southwest Adrar. In Western Sahara, vegetation was becoming green in the northeast. In Algeria, green vegetation was present in many of the wadis along a 300 km stretch west of Tamanrasset. Vegetation was also green in irrigated areas near Adrar and In Salah in the central Sahara. In northern Mali, green vegetation was present in the main wadis in the Adrar des Iforas but dry on the Tamesna plains in the Tilemsi Valley.

In the **Central Region**, no significant rains fell during February and consequently, vegetation was drying out in traditional winter breeding areas along both sides of the Red Sea except in the Tokar Delta and in a few places in Wadi Diib in Sudan. Due to poor rains so far this winter, ecological conditions were also dry along the coast of northwest Somalia there were a few small places on the coast east of Djibouti where vegetation was becoming green. In Oman, vegetation dried out in the centre of the country and was already dry in southern and northern regions. Conditions were also dry along the coast and in the interior of eastern Yemen.

In the **Eastern Region**, good rains fell at the beginning of February in spring breeding areas along the coast of Baluchistan near Chabahar, Iran and Pasni, Pakistan. Rain fell again at mid-month and at the end of February in Baluchistan, Iran.



Area Treated

Ethiopia	47 ha (February)
Iran	150 ha (February)
Oman	400 ha (February)
Saudi Arabia	no details (February)
Sudan	2,514 ha (February)



Desert Locust Situation and Forecast

(see also the summary on page 1)

WESTERN REGION

Mauritania

• SITUATION

During February, small-scale breeding continued in southwest Adrar for the fourth consecutive month, and low numbers of solitarious hoppers of all instars mixed with immature and mature solitarious adults were present in the valleys of Kediet Imert south of Oujft (2003N/1301W). Adults were seen copulating and laying eggs during the second week of the month.

• FORECAST

Scattered hoppers will fledge and adults will continue to mature and persist near Oujft. New hatching may occur in early March and the resulting hoppers will fledge about mid-April. Consequently, locust numbers will increase slightly in southwest Adrar.

Mali

• SITUATION

No surveys were carried out and no locusts were reported during February.

• FORECAST

Scattered locusts are likely to be present and will persist in parts of the Adrar des Iforas.

Niger

• SITUATION

No reports were received during February.

• FORECAST

Low numbers of locusts are likely to be present and will persist in parts of the Air Mountains. Limited breeding could take place if conditions become favourable.

Chad

• SITUATION

No surveys were carried out and no locusts were reported during February.

• FORECAST

No significant developments are likely.

Senegal

• SITUATION

No surveys were carried out and no locusts were reported during February.

• FORECAST

No significant developments are likely.

Benin, Burkina Faso, Cameroon, Cape Verde, Côte d'Ivoire, Gambia, Ghana, Guinea Bissau, Guinea, Liberia, Nigeria, Sierra Leone and Togo

• FORECAST

No significant developments are likely.

Algeria

• SITUATION

During February, scattered immature and mature solitary adults were present in several wadis in the southern Sahara from west of Tamanrasset (2250N/0528E) to In Ziza (2330N/0239E). A few solitary adults were seen in the central Sahara near Adrar (2753N/0017W) and In Salah (2712N/0229E), west of Illizi (2630N/0825E), southwest of Djanet (2434N/0930E) and near the Niger border northwest of In Guezzam (1937N/0552E).

• FORECAST

Small infestations will persist in parts of the Sahara. Small-scale breeding could occur near Adrar, In Salah and south and west of Tamanrasset, causing locust numbers to increase slightly.

Morocco

• SITUATION

No surveys were carried out and no locusts were reported during February.

• FORECAST

Scattered adults may appear in Western Sahara and breed on a small-scale in areas of recent rainfall.

Libyan Arab Jamahiriya

• SITUATION

No surveys were carried out and no locusts were reported during February.

• FORECAST

Scattered adults may be present in the southwest near Ghat and could breed on a limited scale if rains fall.

Tunisia

• SITUATION

No reports were received during February.

• FORECAST

No significant developments are likely.

CENTRAL REGION

Sudan

• SITUATION

During February, locusts declined on the Red Sea coast in the Tokar Delta (1827N/3741E) and in Wadi Diib. Two fifth instar hopper bands at densities up to 33 hoppers/m² were reported during the first week in Tokar and groups of fledglings were seen at mid-month. Scattered immature and mature solitary adults were present during most of the month in the delta and at one place on the southern coast near Adobana (1810N/3816E). In the northeast, a very small second to fifth instar hopper band with a density of 5 hoppers/m² and scattered mature solitary adults were present during the first week in Wadi Diib northwest of Sufiya (2119N/3613E). Thereafter, no locusts were seen in the area. Ground teams treated 2,514 ha in Tokar Delta during February.

• FORECAST

Locusts will continue to decline in Wadi Diib, Tokar Delta and nearby coastal plains as vegetation dries out. Nevertheless, scattered adults may persist in some areas.

Eritrea

• SITUATION

No locusts were seen during surveys carried out on the Red Sea coastal plains from Tio (1441N/4057E) to the Sudanese border in the first half of February.

• FORECAST

Isolated adults may be present and could persist in areas of green vegetation between Mehimet and Karora. There is a low risk that a few swarms may appear on the southern coast from Ethiopia.

Ethiopia

• SITUATION

During February, immature swarms persisted in the southern zones of Bale and Borena, mainly between Mega (0403N/3819E) and Konso (0520N/3726E). A few swarms were seen along the eastern side of the Rift Valley and in the Harar Highlands about 250 km southwest of Dire Dawa (0935N/4150E). Only limited



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control operations could be carried out because the swarms were highly mobile and often present in areas that were mountainous and inaccessible. Control teams treated 47 ha near Konso during February.

• **FORECAST**

Swarms are likely to remain in the Harar Highlands and the Rift Valley where they could mature and lay eggs there or move toward the Ogaden and breed with the onset of the long rains in March or April. This is a low risk that a few swarms could move north along the railway or northwest towards the Danakil.

Djibouti

• **SITUATION**

No locusts were seen during a survey carried out on the coast between Djibouti and the Somali border on 18 February.

• **FORECAST**

No significant developments are likely.

Somalia

• **SITUATION**

No locusts were seen during surveys carried out in February on the northwest coastal plains and on the plateau between Hargeisa (0931N/4402E) and the borders of Ethiopia and Djibouti.

• **FORECAST**

Isolated adults may be present in coastal areas between Berbera and Djibouti. No significant developments are likely. There is a low to moderate risk that a few swarms may appear from Ethiopia.

Kenya

• **SITUATION**

No locusts were reported during February.

• **FORECAST**

The risk of swarms appearing from southern Ethiopia will decline during March as the Inter-Tropical Convergence Zone moves further north. Consequently, the situation will become calm and no significant developments are likely.

Egypt

• **SITUATION**

During February, isolated immature solitary adults were present near Lake Nasser between Abu Simbel (2219N/3138E) and Tushka (2247N/3126E) as well as in the Allaqi area. No locusts were seen

northeast of Aswan or along the Red Sea coast north of Shalatyn.

• **FORECAST**

Scattered adults will persist in parts of the Western Desert, along the Lake Nasser shoreline and on the Red Sea coastal plains south of Marsa Alam. Small-scale breeding could occur in areas of recent rainfall.

Saudi Arabia

• **SITUATION**

On 21 February, at least two immature swarms, one of 1 km² in size and the other 9 km², with up to 3,000 adults/m² were reported at several farms in the Empty Quarter near Yebreen (2313N/4856E) and Al Safy (2347N/4906E). Locusts were also reported nearby and some of the adults were maturing. Ground and aerial control operations were immediately carried out.

• **FORECAST**

Any adults that remain in the Empty Quarter could breed in agricultural areas. Scattered adults may be present along parts of the Red Sea coastal plains between Jizan and Yenbo. Unless additional rains fall, small-scale breeding is not expected to occur.

Yemen

• **SITUATION**

In mid-February, three immature swarms were reported in the interior near the Oman border between Hat (1719N/5205E) and Shehan (1746N/5229E). Some locusts may have reached Remah (1727N/5034E) but most are thought to have dispersed north towards the Empty Quarter. No locusts were seen during surveys along the coast between the Oman border and Mukalla (1431N/4908E) or in the interior of Hadhramaut and Shabwah regions. No surveys were conducted on the Red Sea coastal plains or near Aden in February.

• **FORECAST**

Scattered adults may be present and breeding on a limited scale along parts of the Red Sea coastal plains and perhaps along the coast near Aden.

Oman

• **SITUATION**

During February as vegetation dried out, several immature swarms formed from previous breeding in the central interior. In the south, several small immature swarms and groups of high-density immature gregarious adults were seen in the interior between the Yemen border near Maziuna (1750N/5239E), the Dhofar Hills and north Thumrait (1736N/5401E) on 11-18 February. The adults and swarms were highly mobile and mainly moving in a northerly direction although a few probably moved southwest into eastern Yemen. In the northern interior, immature adult groups and swarms were reported

on the 12th to 15th at a few places along the southern side of Jebel Akhdar between Nizwa (2255N/5731E) and Ibri (2314N/5630E), including Wadi Al Ain. On the 18-20th, some groups and swarms reached the UAE border near Hafit (2355N/5550E). Ground teams treated 400 ha. On the northern Batinah coastal plains, locusts were seen on the 16th in Wadi Bani Ghafir (ca. 2342N/5721E). Groups of gregarious immature adults were seen further north on the Musandam coast near Midha (2517N/5619E) flying northeast towards the sea on the 19th.

• **FORECAST**

Remnants from the immature groups and swarms may persist in the northern interior and coastal areas where they are likely to mature and lay eggs if conditions become favourable in Dhahira, Dakhliya, Sharqiya, Batinah and Musandam regions. If so, hatching will occur in March that could lead to the formation of small hopper groups and bands. Regular surveys are recommended in all areas.

UAE

• **SITUATION**

In mid-February, small groups of adults were reported in southern oases and agricultural areas near the Saudi Arabian border between Madinat Zayed (2339N/5342E) and Huwaylah (2307N/5347E). The adults moved east where low-density groups of immature gregarious adults were reported in Abu Dhabi (2427N/5421E) on the 19th. Locusts were reported the following day in Dubai (2516N/5518E) and then in the eastern emirates. Locusts were also seen near the Omani border at Al Ain (2413N/5545E). These locusts probably arrived from the Empty Quarter and Oman.

• **FORECAST**

Although the swarms passed through the country, there is a low risk that some adults may have remained on the Ras Al Khaymah and Al Fujayrah coasts where they could lay eggs that would hatch and give rise to hoppers during March.

Bahrain, Iraq, Israel, Jordan, Kuwait, Lebanon, Palestine, Qatar, Syria, Tanzania, Turkey and Uganda

• **FORECAST**

No significant developments are likely.

EASTERN REGION

Iran

• **SITUATION**

During February, scattered solitary mature adults persisted on the southeast coast near Chabahar (2517N/6036E) and bred on a small-scale. At mid-month, isolated third to fifth instar hoppers were seen in a few places. On the 20th, a low-density

swarm arrived on the southern coast near Minab (2708N/5705E) and quickly dispersed and laid eggs within a 2 km² area. Ground control operations treated 150 ha on the 25th. There was an unconfirmed report of a swarm further west on the coast at Bande-Kong (2635N/5456E) on the 27th. No locusts were seen during surveys carried out in these areas earlier in the month.

• **FORECAST**

Hatching and the formation of hopper groups and small bands are expected to occur during the first half of March on the coast near Minab. Consequently, locust numbers will increase and control operations may be required. Scattered locusts will persist on the coast near Chabahar where small-scale breeding is likely to occur in areas of recent rainfall. Regular surveys are recommended in all areas.

Pakistan

• **SITUATION**

No locusts were reported during February.

• **FORECAST**

Scattered locusts are almost certainly present in coastal areas of Baluchistan between Iran and Lasbela, and perhaps in the interior near Turbat, Panjgur, Kharan, Dalbandin and Nushki. Small-scale breeding may already be in progress in coastal areas and will occur in the interior as temperatures rise. Consequently, locust numbers will increase during the forecast period and regular surveys are recommended.

India

• **SITUATION**

No locusts were seen during surveys carried out in Rajasthan during the second half of January and throughout February.

• **FORECAST**

No significant developments are likely.

Afghanistan

• **SITUATION**

No reports received.

• **FORECAST**

No significant developments are likely.



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Announcements

Locust reporting. During recession periods, countries should report at least once/month and send RAMSES data with a brief interpretation. During caution (yellow) and threat (orange) periods, locust outbreaks, upsurges and plagues, RAMSES output files with a brief interpretation should be sent at least twice/week within 48 hours of the last survey. Affected countries are also encouraged to prepare decadal bulletins summarizing the situation. All information should be sent by e-mail to the FAO/ECLO Desert Locust Information Service (eclo@fao.org). Information received by the end of the month will be included in the FAO Desert Locust Bulletin for the current month; otherwise, it will not appear until the following month. Reports should be sent even if no locusts were found or if no surveys were conducted.

Desert Locust warning levels. A colour-coded scheme indicates the seriousness of the current Desert Locust situation: green for *calm*, yellow for *caution*, orange for *threat* and red for *danger*. The scheme is applied to the Locust Watch web page and to the monthly bulletin's header. The levels indicate the perceived risk or threat of current Desert Locust infestations to crops and appropriate actions are suggested for each level.

Climate change. Potential impacts of climate change on Desert Locust are under discussion. More details can be found on Locust Watch in the Activities section (<http://www.fao.org/ag/locusts/en/activ/index.html>).

Google group. FAO DLIS has established a Google group for national locust information officers to exchange opinions and share experiences regarding data management and analysis, GIS, eLocust2 and satellite imagery. Interested information officers should contact DLIS (eclo@fao.org) for details.

MODIS imagery. Columbia University's International Research Institute for Climate and Society (IRI) provides 16-day 250-metre resolution MODIS imagery as well as daily and decadal rainfall imagery for monitoring breeding conditions in the

Desert Locust recession area. These products can be downloaded in different formats suitable for GIS at: http://iridl.ldeo.columbia.edu/maproom/Food_Security/Locusts/index.html. Comments and questions can be addressed to Pietro Ceccato (pceccato@iri.columbia.edu).

New information on Locust Watch. Recent additions to the web site are:

- **Locust situation.** Several updates during February (home page and in Archives section)
- **FAO Technical Series No. 35.** Preparedness to prevent Desert Locust plagues in the Central Region: an historical overview by J. Magor et al (Publications section – Documents)

Links to the above information can be found in the *Latest Additions* section on Locust Watch.

2008 events. The following activities are scheduled:

- **Joint Survey.** Iran/Pakistan joint border survey (1-30 April)
- **CRC/SWAC.** Informal discussions on the use and improvement of RAMSES, eLocust2 and forecasts, Cairo (22-24 April)
- **CRC.** 26th Session and 30th Executive Committee meeting, Muscat (26-30 July, to be confirmed)



Glossary of terms

The following special terms are used in the Desert Locust Bulletin when reporting locusts:

NON-GREGARIOUS ADULTS AND HOPPERS

ISOLATED (FEW)

- very few present and no mutual reaction occurring;
- 0 - 1 adult/400 m foot transect (or less than 25/ha).

SCATTERED (SOME, LOW NUMBERS)

- enough present for mutual reaction to be possible but no ground or basking groups seen;
- 1 - 20 adults/400 m foot transect (or 25 - 500/ha).

GROUP

- forming ground or basking groups;
- 20+ adults/400 m foot transect (or 500+/ha).

ADULT SWARM AND HOPPER BAND SIZES

VERY SMALL

- swarm: less than 1 km² • band: 1 - 25 m²

SMALL

- swarm: 1 - 10 km² • band: 25 - 2,500 m²

MEDIUM

- swarm: 10 - 100 km² • band: 2,500 m² - 10 ha

LARGE

- swarm: 100 - 500 km² • band: 10 - 50 ha

VERY LARGE

- swarm: 500+ km² • band: 50+ ha

RAINFALL

LIGHT

- 1 - 20 mm of rainfall.

MODERATE

- 21 - 50 mm of rainfall.

HEAVY

- more than 50 mm of rainfall.

OTHER REPORTING TERMS

BREEDING

- the process of reproduction from copulation to fledging.

SUMMER RAINS AND BREEDING

- July - September/October

WINTER RAINS AND BREEDING

- October - January/February

SPRING RAINS AND BREEDING

- February - June/July

DECLINE

- a period characterised by breeding failure and/or successful control leading to the dissociation of swarming populations and the onset of recessions; can be regional or major.

OUTBREAK

- a marked increase in locust numbers due to concentration, multiplication and gregarisation which, unless checked, can lead to the formation of hopper bands and swarms.

UPSURGE

- a period following a recession marked initially by a very large increase in locust numbers and contemporaneous outbreaks followed by the production of two or more successive seasons of transient-to- gregarious breeding in complimentary seasonal breeding areas in the same or neighbouring Desert Locust regions.

PLAGUE

- a period of one or more years of widespread and heavy infestations, the majority of which occur as bands or swarms. A major plague exists when two or more regions are affected simultaneously.

RECESSION

- period without widespread and heavy infestations by swarms.

REMISSION

- period of deep recession marked by the complete absence of gregarious populations.

WARNING LEVELS

GREEN

- Calm. No threat to crops. Maintain regular surveys and monitoring.

YELLOW

- Caution. Potential threat to crops. Increased vigilance is required; control operations may be needed.

ORANGE

- Threat. Threat to crops. Survey and control operations must be undertaken.

RED

- Danger. Significant threat to crops. Intensive survey and control operations must be undertaken.

REGIONS

WESTERN

- locust-affected countries in West and North-West Africa: Algeria, Chad, Libya, Mali, Mauritania, Morocco, Niger, Senegal, Tunisia; during plagues only: Burkino Faso, Cape Verde, Gambia, Guinea and Guinea-Bissau.

CENTRAL

- locust-affected countries along the Red Sea: Djibouti, Egypt, Eritrea, Ethiopia, Oman, Saudi Arabia, Somalia, Sudan, Yemen; during plagues only: Bahrain, Iraq, Israel, Jordan, Kenya, Kuwait, Qatar, Syria, Tanzania, Turkey, UAE and Uganda.

EASTERN

- locust-affected countries in South-West Asia: Afghanistan, India, Iran and Pakistan.



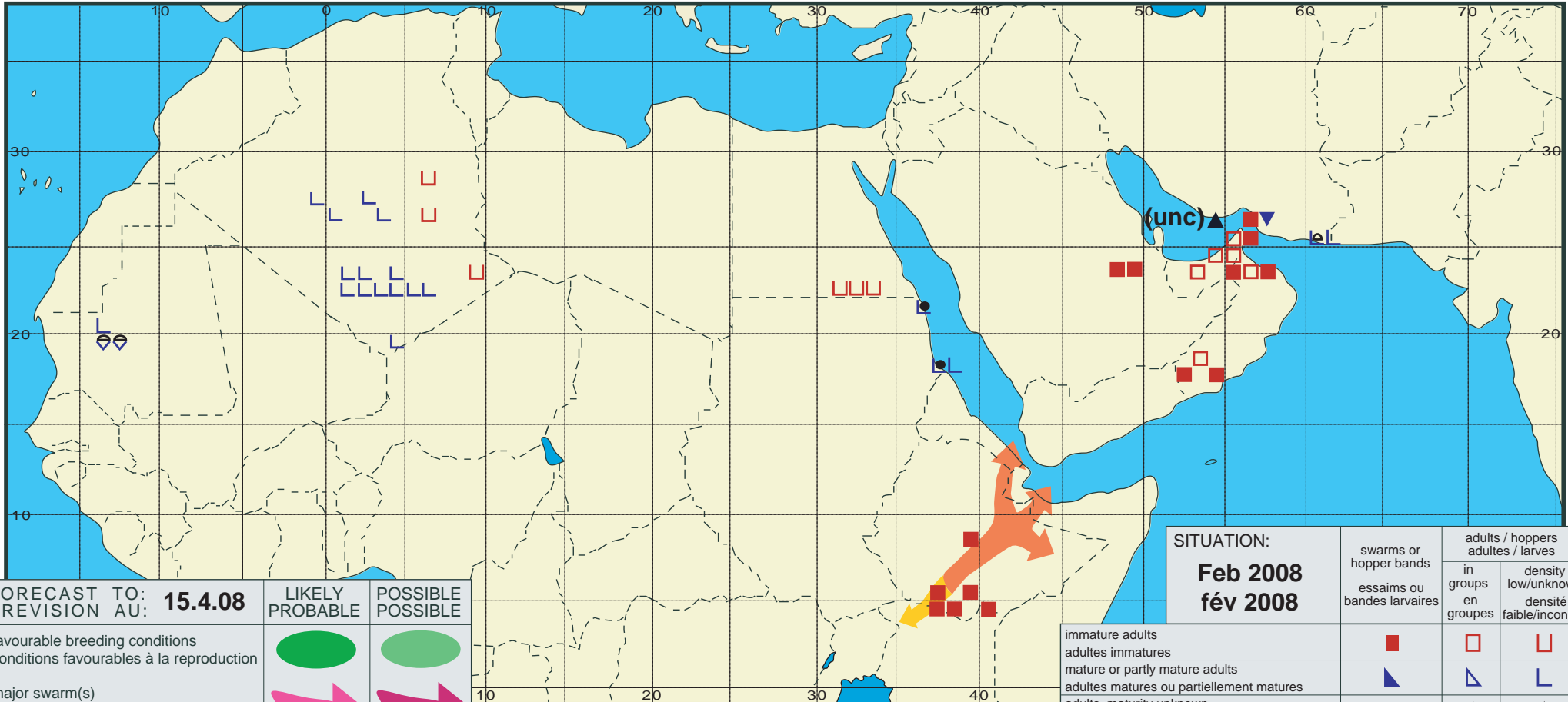
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Desert Locust Summary

Criquet pèlerin - Situation résumée

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FORECAST TO: PREVISION AU:	15.4.08	LIKELY PROBABLE	POSSIBLE POSSIBLE
favourable breeding conditions conditions favorables à la reproduction			
major swarm(s) essaim(s) important(s)			
minor swarm(s) essaim(s) limité(s)			
non swarming adults adultes non essaimant			

SITUATION: Feb 2008 fév 2008	swarms or hopper bands essaims ou bandes larvaires	adults / hoppers adultes / larves	
		in groups en groupes	density low/unknown densité faible/inconnue
immature adults adultes immatures			
mature or partly mature adults adultes matures ou partiellement matures			
adults, maturity unknown adultes, maturité inconnue			
egg laying or eggs pontes ou œufs			
hoppers larves			
hoppers & adults (combined symbol example) larves et adultes (exemple symboles combinés)			